



## Sections 2.3 + 2.4 : Linear Functions

Find the slope of the line that passes through the given points...

slope formula:  $m = \frac{y_2 - y_1}{x_2 - x_1}$

a)  $(-3, 7)$  and  $(-2, 4)$       b)  $(7, -3)$  and  $(7, 1)$

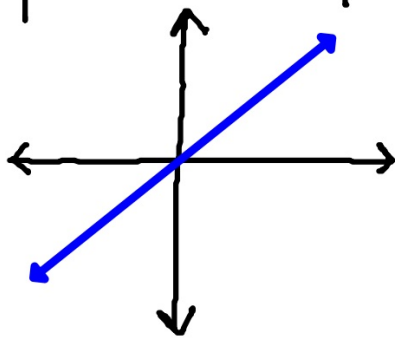
$$\frac{4 - 7}{-2 - -3} = \frac{-3}{1} \text{ or } -3$$

$$\frac{1 - -3}{7 - 7} = \frac{4}{0}$$

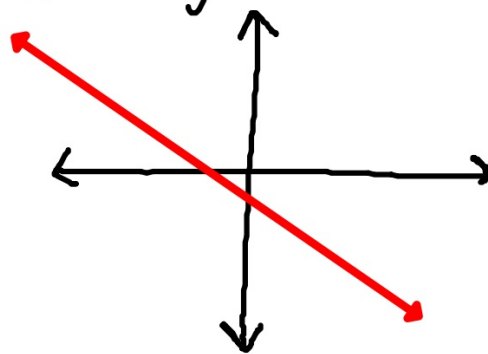
Undefined

Draw a picture of a line with...

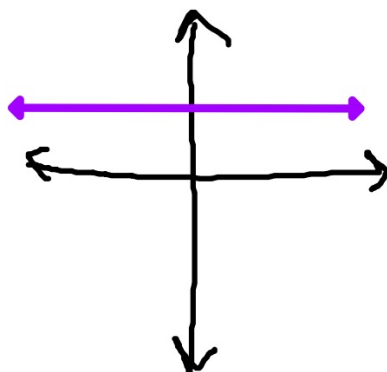
(a) positive slope



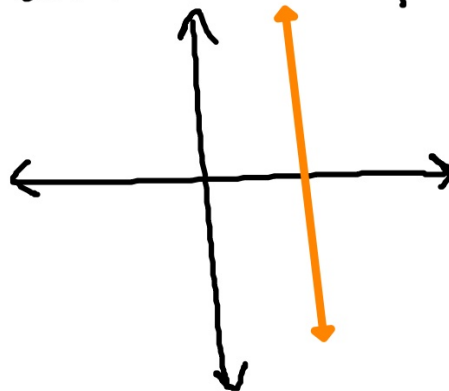
(b) negative slope



(c) zero slope



(d) undefined slope



Slope Intercept Form:  $y = mx + b$

\* Write the equation in slope intercept form:

$$\begin{array}{rcl} \textcircled{a} & 5x - 4y = 16 & \\ & \underline{-5x} & \underline{-5x} \\ & -4y = -5x + 16 & \\ & \underline{-4} & \underline{-4} \quad \underline{-4} \\ & y = \frac{5}{4}x - 4 & \end{array}$$

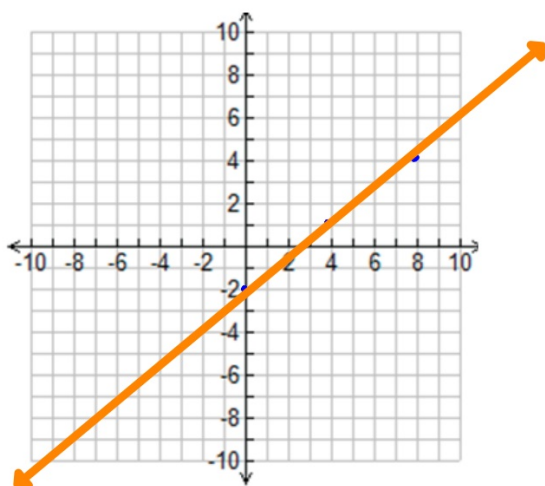
$$\begin{array}{l} \text{slope} = \underline{\frac{5}{4}} \\ y \text{ int} = \underline{-4} \end{array}$$

$$\begin{array}{rcl} \textcircled{b} & 3x + 2y = 18 & \\ & \underline{-3x} & \underline{-3x} \\ & 2y = -3x + 18 & \\ & \underline{2} & \underline{2} \quad \underline{2} \\ & y = -\frac{3}{2}x + 9 & \end{array}$$

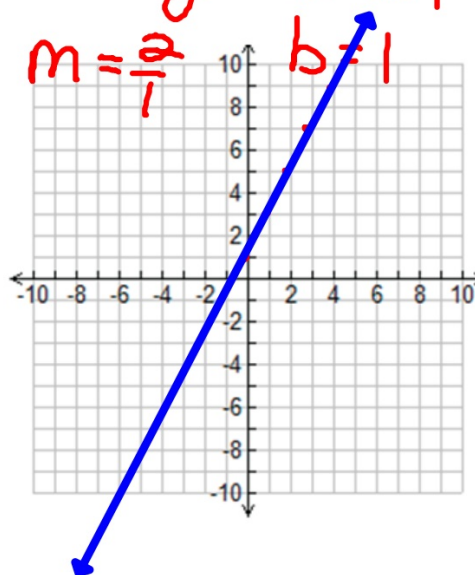
$$\begin{array}{l} \text{slope} = \underline{-\frac{3}{2}} \\ y \text{ int} = \underline{9} \end{array}$$

Graph each line:

①  $y = \frac{3}{4}x - 2$   
 $m = \frac{3}{4}$   $b = -2$



②  $-2x + y = 1$   
 $\frac{+2x}{+2x} \quad \frac{+2x}{+2x}$   
 $y = 2x + 1$   
 $m = \frac{2}{1}$   $b = 1$

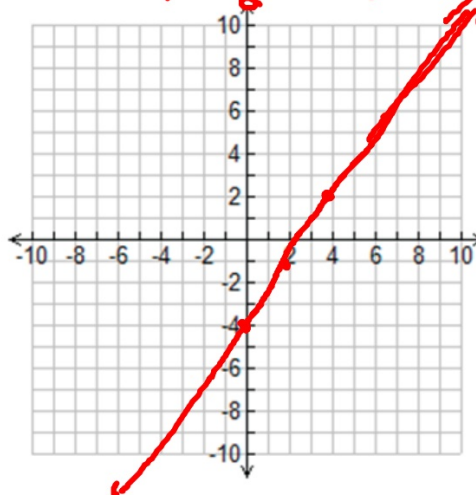


$$\textcircled{c} \quad 3x - 2y = 8$$

$$\begin{array}{r} -3x \quad \bullet \quad -3x \\ \hline \end{array}$$

$$\begin{array}{r} -2y = -3x + 8 \\ \hline \end{array}$$

$$\begin{array}{r} -2 \quad -3 \quad 8 \\ \hline y = \frac{3}{2}x - 4 \end{array}$$

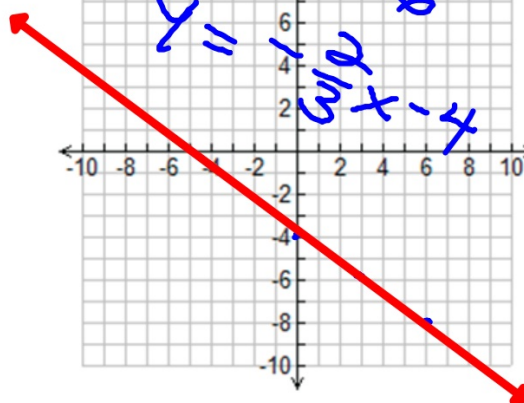


$$\textcircled{d} \quad 4x + 6y = -24$$

$$y = -\frac{2}{3}x - 4$$

$$\begin{array}{r} 6y = -4x - 24 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad -4 \quad -24 \\ \hline y = -\frac{2}{3}x - 4 \end{array}$$



HW: 9/25/12

P. 78 - #8-#16  
even only

#22-#26  
even only